SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME I.] NEW-YORK, THURSDAY, APRIL 16, 1846. [NUMBER 31.]

THE SCIENTIFIC AMERICAN
PUBLISHED EVERY THURSDAY MORNING, AT THE
SUN BUILDINGS,
—Entrance 128 Fulton st., and 89 Nassau st.—
ALSO, AT NO. 13 COURT ST., BOSTON, AND NO. 29 ARCADE, PHILADELPHIA.
(The Principal Office being at New York,)

By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting o notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

TERMS.—"The Scientific American" will be furnished to subscribers at $2, per annum,—one dollar in advance, and the balance in six months.

Five copies will be sent to one address six months, for four dollars in advance.

Any person procuring four or more subscribers, will be entitled to a commission of twenty-five cents each.

TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

"How they brought the good news from Ghent to Aix."

I sprang to the stirrup, and Jorris, and He!
I galloped, Dirck galloped, we galloped all Three;
"Good speed!" cried the watch, as the gate-bolts undrew;
"Speed!" echoed the wall to us galloping through;
Behind shut the postern, the lights sank to rest,
And into the midnight we galloped abreast.

Not a word to each other; we kept the great pace
Neck by neck, stride for stride, never changing our place;
I turned in my saddle and made its girths tight,
Then shortened each stirrup, and set the pique right,
Re-buckled the check-strap, chained slacker the bit,
Nor galloped less steadily Roland a whit.

'Twas moonset at starting; but while we drew near
Lokeren, the cocks crew and twilight dawned clear;
At Boom, a great yellow star came out to see;
At Duffeld, 'twas morning as plain as could be;
And from Mecheln church-steeple we heard the half-chime,
So Joris broke silence with, "Yet there is time!"

At Aerschot, up leaped of a sudden the sun
And against him the cattle stood black every one,
To stare through the mist at us galloping past,
And I saw my stout galloper Roland at last,
With resolute shoulders, each butting away
The haze as some bluff river headland its spray.

And his low head and crest, just one sharp ear bent back
For my voice, and the other pricked out on his track;
And one eye's black intelligence—ever that glance
O'er its white edge at me, his own master, askance!
And the thick heavy spume-flakes which aye and anon
His fierce lips shook upwards in galloping on.

By Hasselt, Dirck groaned; and cried Joris, "Stay spur
Your Roos galloped bravely, the fault's not in her,
We'll remember at Aix"—for one heard the quick wheeze
Of her chest, saw the stretched neck and staggering knees,
And sunk tail and horrible heave of the flank,
As down on her haunches she shuddered and sank.

So left were we galloping, Joris and I,
Past Looz and past Tongres, no cloud in the sky;
The broad sun above laughed a pitiless laugh,
'Neath our feet broke the brittle bright stubble like chaff;
Till over by Dalhem a dome-spire sprang white,
And "gallop," gasped Joris, "for Aix is in sight!"

"How the'll greet us,"—and all in a moment his roan
Rolled neck and croup over, lay dead as a stone;
And there was my Roland to bear the whole weight
Of the news which alone could save Aix from her fate,
With his nostrils like pits full of blood to the brim,
And with circles of red for his eye-sockets' rim.

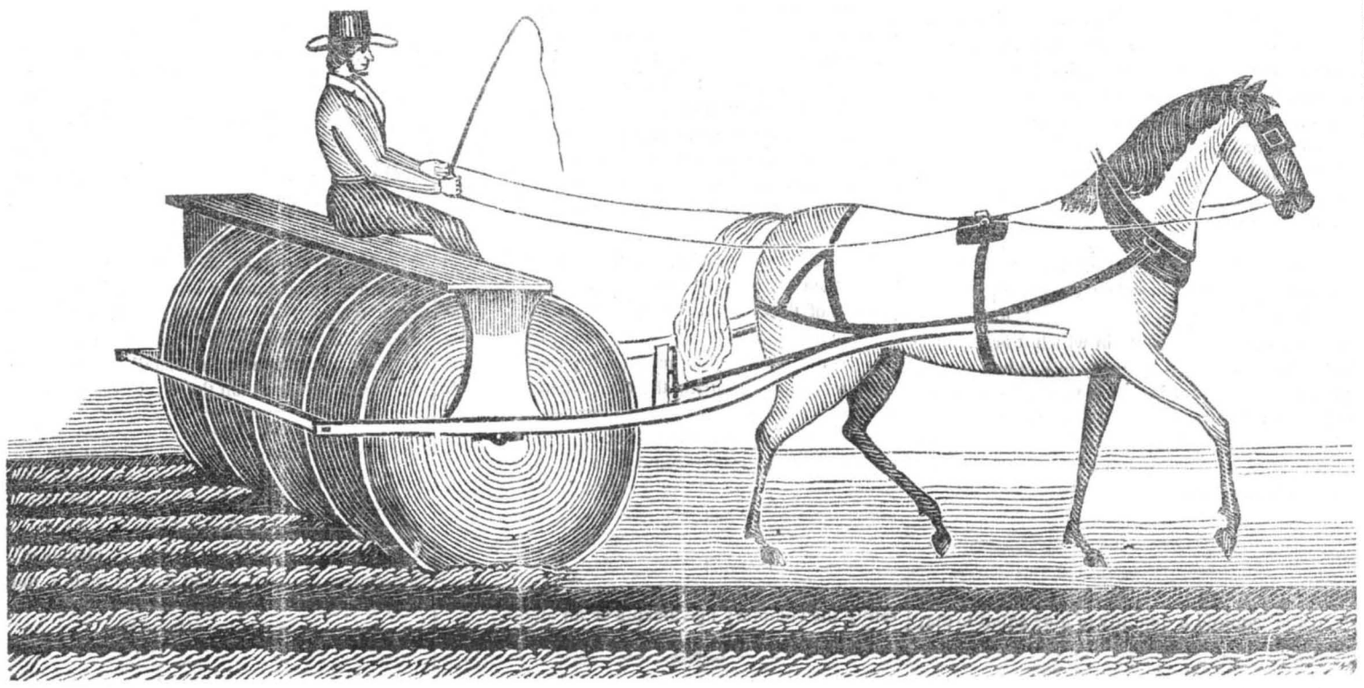
Then I cast loose my buff-coat, each holster let fall,
Shook off both my jack-boots, let go belt and all,
Stood up in the stirrup, leaned patted his ear,
Called my Roland his pet-name, my horse without peer;
Clapped my hands, laughed and sang, any noise, bad or good,
Till at length into Aix Roland galloped and stood.

And all I remember is, friends flocking round
As I sate with his head 'twixt my knees on the ground,
And no voice but was praising this Roland of mine,
As I poured down his throat our last measure of wine
Which (the burgesses voted by common consent)
Was no more than his due who brought good news from Ghent.

RUNNING IN DEBT.—Every young man should beware of running in debt. Running in debt will certainly injure him. Those to whom he is in debt will think less of him for it. Work, earn, and buy what you want. Economise and get along; beg or borrow, but don't get trusted! We have known many young men injure themselves by becoming involved in debt. Many persons speculate on the promises of others, and run great hazards on their money; but we rarely ever see them reckless with what they have labored for and accumulated themselves.

ACCOMMODATING.—"My friend," said a creditor to a delinquent, "I wish you would pay this note, it is almost worn out." "Just step into my office, my dear fellow, and I will copy it off on pasteboard, which will last forever," was the consoling reply.

THE ROTARY PLOUGH.



INTRODUCTION.—It is well known and admitted by all scientific farmers, that a large portion of the power applied to the draught of an ordinary plough, is lost in the friction which occurs between the plough and the earth. It is thought by some, that one-third part of the power which is ordinarily applied to a plough, would be sufficient to remove and overturn the earth, if this power could be applied direct and without friction. Moreover, even in the lightest soils, where no more than half of one horse power is required to draw the plough, the time and labor of one man, at least, with a horse, and sometimes a boy, are required in forming each furrow: thus expending much time to little purpose. To remedy such loss of time and power, is the object of the presented Rotary Plough, which but not only turn five furrows at once, but, operating on the rolling principle, will work free from the ordinary friction of common ploughs, and accomplish three or four times as much work in proportion to the power and attendance employed.

EXPLANATION.—The principal part of the machine consists of four or more wheels on a common axle, which has pivots at each end, similar to those of a field roller. These wheels are made of iron plate, about forty inches in diameter, and are made convex on one side, and consequently concave on the other, in form similar to a large clock-bell; the convex being on the *land side*, or opposite to the direction in which the furrows are turned. The wheels are sharp at the peripheries, and are secured on the axle by means of cast-iron hubbs, and are about ten inches apart. The position of the axle is not at right angles with the direction of the horse, but is placed obliquely, so that the end which is in the direction of the concave sides of the wheels, (and which appears nearest in the engraving) is nearly three feet further forward than the other. The wheels will, nevertheless, in consequence of their concavity, roll in the direction of the horse, but each wheel as it rolls will turn a complete furrow, breaking and mixing the earth in a more perfect manner than is done by a common plough. The wheels are enclosed in a frame, the ends of which are formed by the shafts, by which the machine is drawn, and to which the bearings of the axles are attached. Two posts are framed to the shafts, directly over the axle, and extending upward about two feet, support a horizontal plank, which constitutes a seat for the driver. A working model of this machine may be seen at the office of this paper, and the inventor will grant the free right of the invention for 14 years to all persons who will adopt the use of the machine, within two months. The cost of each machine is about 25 dollars.

THE IRON AGE IN IRELAND.—It seems from old authors, that some centuries since Ireland presented a picture of manufacturing industry, such as we should now, perhaps, find only paralleled in the interior of Russia, or the mountainous districts of Northern Spain. Covered with spreading forests, and possessing iron ore of the highest purity in abundance, the island was sprinkled over with small iron works, in which the wood charcoal was of course employed, and iron of such excellent quality as we now only import from Sweden and Russia, for the finer cutlery and mechanisms, was extensively manufactured. Indeed, it is upon record that, two hundred years ago, iron was an article of export from Ireland to London. But all this prosperity passed away with the forests that overshadowed the island, and similar causes are similarly operating at this day to limit the economic manufacture of iron by means of wood fuel on the continent of Europe. England would, in all probablity, have suffered simultaneously with her sister island, had not wonderfully fortunate destiny intervened in the person of one man, whose name is but too littleknown and honored amongst us. It would not be difficult to show that, had not the talented Dudley substituted coke for charcoal in smelting iron, the conditions of industry, which opened a field for the genius of Watt and Arkwright, could scarcely have existed. The iron manufacture of England at once progressed with new life—that of Ireland as rapidly declined, for there was no Dudley there; and the last charcoal furnace was extinguished with the last mass of wood in the county of Kerry, now about one century ago.

THE VATICAN.—This immense pile of building is beyond all imagination. I was told its extreme length through the apartments, and not duplicating a single room, was 79,000 feet, or nearly 14 English miles. It has 4000 rooms, and 2000 flights of stairs. This immense pile contains most of the antiquities of Rome, as well as most of the celebrated statuary and paintings of the early as well as the modern artists. The sculpture is great; the inimitable Apollo Belvidere, and the truly great Dying Gladiator, with 10,000 more, some very fine, and others common; all the Cæsars, and all the Roman Emperors, Presidents and Senators, as well as the orators and poets, and a host of gods of sea, land, and air. The whole is a world of the fine arts, on a much greater scale than any other city can boast of: in fact, than all the cities of Christendom together.

CAMPHOR.—The Camphor Laurel grows in great abundance and to a very considerable size in the forests of Japan. It is not uncommon in greenhouses in England. Every part of the tree smells strongly of camphor, which is obtained from the trunk, branches, and roots, by distillation. They are cut down into small pieces, and put into a still with a quantity of water. After the water has been kept boiling forty-eight hours, the camphor is found to adhere to straw, with which the head of the kettle is lined. In this state it is imported by the Dutch, and is called crude camphor. It is purified by a second sublimation.

CURE FOR A CANCER.—Apply a poultice of raw cranberries. We have seen it once tried, where the cancer, about an inch or two beneath the surface of the skin, had become as large as a small pullet's egg. The cranberries were mashed in a mortar, and placed on, renewing them thrice in 24 hours. In a few days the surface was covered with pustules which filled like the small pox, and became so sore that the poultice was suspended a day or two; after they came off it was applied again, with the same effect; again suspended and renewed, and each time the cancer became softened and decreased in size, until it finally disappeared. Nearly three years have passed, and it has never troubled the subject again. In this person it was an hereditary disease too, much the most inveterate. The virtues of cranberries are but imperfectly known—they have been known to cure a bad sore throar,—are very cooling and efficacious for removing inflammation. We have never known them used in bronchitis but were we afflicted with that complaint it would be the first remedy we would try.—*Ex. pap.*

THE LONGEST BRIDGE IN THE WORLD.—The Boston Transcript says, the land of the Celestials boasts the largest bridge in the world, and this, according to travellers, is the bridge of Layang over an arm of the sea in China. It is built in a similar way as the bridges of Babylon, but entirely of stone. Its length is said to extend to 26,800 Paris feet, and comprises 300 arches, or rather openings of pillars. These are not overspread by arches, but there are placed above them large slabs of stone, which form the roadway, 70 feet broad. The distance of the pillars is nearly 74½ feet, the latter being 70 high, and 15 feet broad, and strengthened with stone facings of the form of triangular prisms, which extend over the whole height of the pillars up to the transversed slabs. The latter (of course more than 70 feet long) extend in breadth to fifteen feet, and have 9 feet in thickness. The parapet is a ballustrade, and every pillar supports a pedestal on which a lion, 21 feet long, and made of one block of marble, is placed.

DISTANCE OF THE STARS.—Who can conceive of the amazing distance of the stars from the earth? The nearest fixed star is sixty millions of millions of miles distant. It would take light, which travels nearly two hundred thousand miles in a second, nearly ten years to travel from this star to the earth. It would take over a hundred years for the light of the stars we can just discern, to reach our globe. But what is this immense distance in comparison with the distance of the smallest telescopic stars? Inconceivable as it is, it would take twenty-four thousand years for their light to reach the earth. The mind is lost in contemplating the immense distances of the worlds by which we are surrounded.

AN EYE WITNESS.—A fellow being brought into Court as a witness in a case of a row, whose eye had been blacked, referred to it as proof in the case. The Court said, facetiously, that the witness's evidence was conclusive, inasmuch as he was an *eye* witness to the whole affair.

WOOLLEN MANUFACTURES IN MASSACHUSETTS.—There are 178 woollen mills in Massachusetts, running 514 sets of machinery. During the past year, these mills consumed 15,387,448 pounds of wool, manufactured 1,022,359 yards of broadcloth, 2,451,458 yards of cassimere, 3,558,720 yards of satinet, 1,652,345 yards of Kentucky jeans, 4,490,937 yards flannel and blanketing, and 256,705 pounds of woollen yarn, 702,000 yards of goods not specified. Total value, $8,877,478. Capital invested in woollen manufactures, $5,604,002. Hands employed, 3,901 males, and 3,471 females.

Carpet Manufactures.—The number of mills is 17, consuming 150,000 lbs. of cotton, and 1,786,238 lbs. of wool. They produce 158,958 yards of carpeting, valued at $834,322. Capital invested, $488,000. Hands employed, 715 males, and 319 females.

Worsted Manufactures.—There are now 10 establishments for the manufacture of worsted in this commonwealth, producing 2,321,338 yards of goods, and 617,366 lbs. of worsted yarn, valued at $654,466. Capital invested, $544,000. 298 males, and 548 females.

Manufacture of Hosiery.—This branch of manufacture has now 17 establishments entirely devoted to it. They produce 134,138 pairs, and 28,200 lbs. of yarn, valued at $94,892. Hands employed, 53 males and 185 females.

Linen Manufactures.—The manufactories of linen in the State are 3 in number, employing 93 males and 99 females, and producing 875,000 yards annually, valued at $145,000. Capital invested, $29,000.

Silk Manufactures.—The eight silk establishments in Massachusetts, produced during the last year 22,509 pounds of sewing silk, valued at $150,477. Capital invested, $38,000. Hands employed, 28 males, and 128 females.

ALBERT AND VICTORIA.—The present Royal Family of England consists of six persons: Alexandria Victoria, twenty-six years of age; and Albert Francis Augustus Charles Emanuel, her royal husband, who is three months younger than his lady, the Queen. The eldest child will be five years old in November, and rejoices in the mellifluous appellative of Victoria Adelaide Maria Louisa. The next child is a boy, and will be four years old the 9th of November. He will be the king hereafter, if he outlives his mother, and the kingdom endures—the boy taking precedence of his sister, although younger. His name is Albert Edward, and is styled the Prince of Wales. The second Princess Royal—two years old—is Alice Maud Mary. The Royal Prince, born the 6th of August last, is named Alfred Earnest Albert.

THE MISSISIPPI RAPIDS.—A petition is before Congress, praying for the removal of the Desmoines and Rock River Rapids in the Missisippi. These rapids constitute, at times, a very serious obstruction to the passage up the river. The petitioners state that in their opinion the loss sustained by the country above, in consequence of the rapids, during the last season, has been nearly if not quite equal to the cost of removing them.

Glossary of Mechanical Terms.

(Continued from No. 30.)

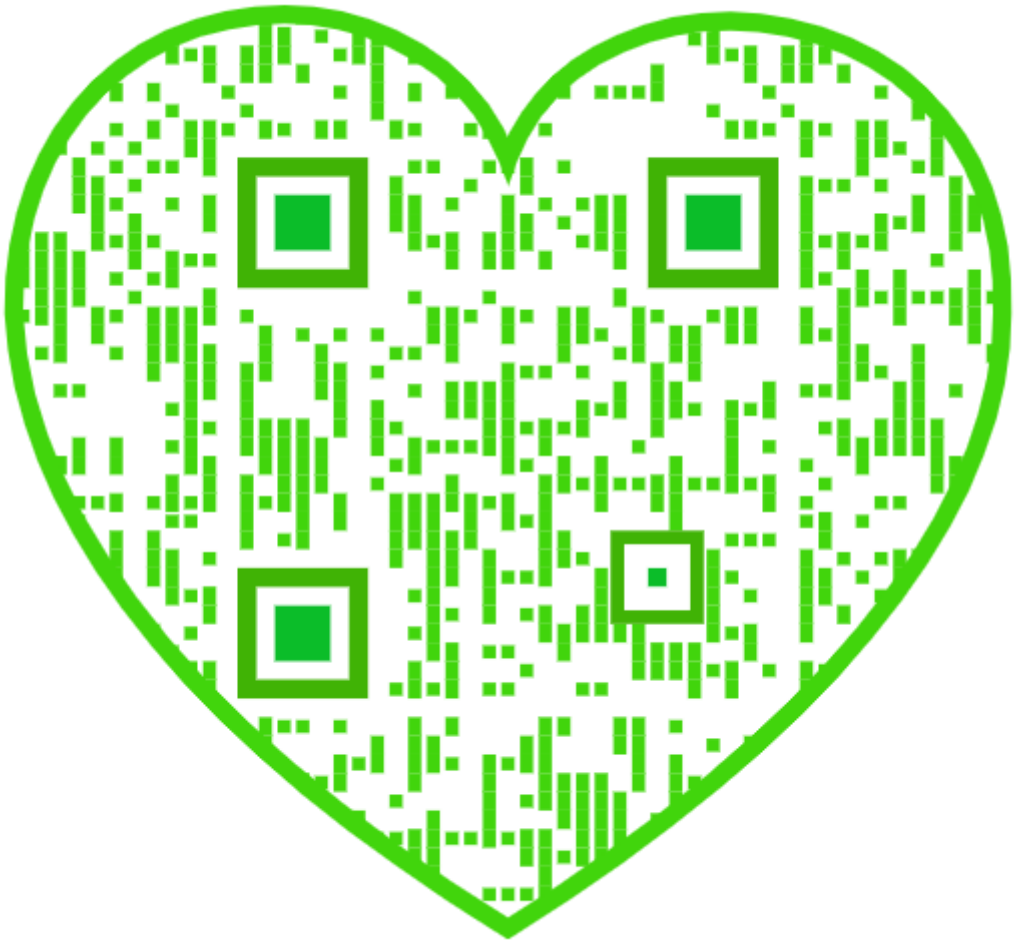
CENTRIFUGAL.—Flying from the centre.
CENTRIPETAL—Flying to the centre.
CHAFERY—A kind of forge in the iron manufacture, where the metal is exposed to a welding heat.
CHALIOMETER—An instrument to measure heat.
CHAMFER—A groove to receive the tenon in carpentry.
CHECKS—A term generally applied to those pieces of timber in machinery which are double, and correspond with each other.
CHORD—Perpendicular let fall from any radius of a circle.
CHUCK—That part of a lathe which revolves with the arbor: to this is affixed the article to be turned.
CIRCUMFERENCE—The measure round any circle.
CLACK—A bell so contrived that it shall ring when more corn is required to be put in the mill.
CLAMP—A pile of unburnt bricks raised for burning.
CLIP—An arrangement to impede velocity by friction.
CLUTCH—*Vide* Bayonet
COCKLING—To entangle.
COCOON—A small ball of silk spun by a silk-worm.
COG—This word, correctly speaking, implies teeth formed of a different material to the body of the wheel; but is generally used to express all kinds of tooth wheels.
CONCENTRIC—Having the same centre.
CONSPIRING FORCES—Various forces combined into one.
CONSTANT FORCES—Force without interruption.
CONTRACTILE FORCES—Forces which decrease.
CORE—The internal mould which forms a hollow in foundry: as the hollow of a tub or pipe.
COUNTERSINK—To take off the edge round a hole to let in a screw-head, that it may be even with the surface.
COUPLINGS—To connect two shafts or spindles longitudinally.
COUPLING-BOX—A strong piece of hollow iron to connect shafting and throw machinery in and out of geer.
CRANK—A bent part of a shaft, by a means of which a rectilinear motion is gained.
CROW-BAR—A strong bar of iron used as a temporary lever.
CROWN-WHEEL—A wheel which has teeth at right angles to its radii.
CYCLOID—A geometric curve.
CYLINDER—A long round body: a roller.
DAM—The bank or wall which pens back the water in a mill head.
DATA—Facts from which we may deduce results.
DECIMETER—To measure by tenths.
DENT—The wire staple which constitutes the tooth of a card.
DIAMETER—The line which passes through the centre of a circle.
DEVIL—A machine for dividing rags or cotton in the first process of the manufacture of paper or cotton.
DIE—Pieces of steel for cutting screws, having the threads counter-sunk on them: a stamp.
DOFFER—That part of a carding machine which takes the cotton from the cylinder.
DOFFING-PLATE—The plate which receives the cotton from the doffer.
DOG—A piece in small machinery which acts as a pall.
DRAW-PLATE—A steel plate, having a gradation of conical holes, through which metals are drawn to be reduced and elongated.
DRENCH—To wet or inundate.
DRILL-BOW—A small bow moved by hand to impart motion to a drill.
DRUM—A hollow cylinder.
DUCTILE—Malleable and soft.
ECCENTRIC—Deviating from the centre; as cambs, attached to the rim or circumference of a shaft for lifting forge hammers, stampers, &c.
EFFECTIVE-HEAD—The real head, or that which can be applied to practice.
EFFLUENT—Flowing from: running out.
EFFLUX—The act of flowing out.
EPICYCLOID—The curve described in the air by a point on the circumference of a circle, when this circle rolls on another circle as its base.
EQUILIBRIUM—That peculiar state of rest in which a body is maintained by the force of gravitation, when the quantity of matter in it is exactly equal on each side of the bar or point on which it is supported.
ESCAPEMENT.—The part of a clock or watch-movement which receives the force of the spring or weight to give motion to the pendulum or balance.
FACE OF THE TOOTH—The curved part of a tooth which imparts impulse to another wheel.
FAGGOT—Pieces of iron bound together for remanufacture.
FEMALE-SCREW—The spiral threaded cavity in which a screw operates.
FLOOD-GATE—A water gate so adjusted as to allow the flowing tide to pass freely, but closes when the tide begins to ebb.

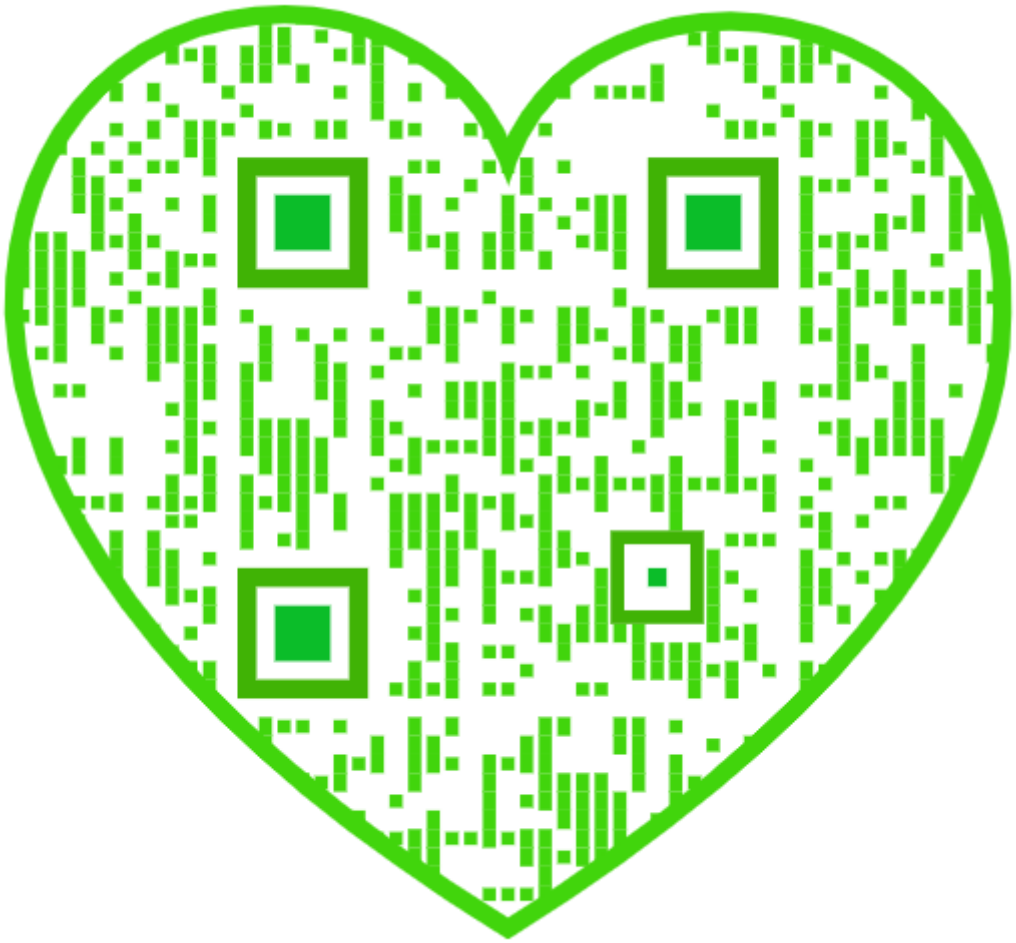
(To be continued.)

NATURAL CURIOSITY.—The Vermont Galaxy states that a curious discovery has recently been made of a deposit in Peacham, several feet thick, which consists almost entirely of the flinty shells of animalcules, so minute that a piece of the earth as large as a pea contains millions of these little shells, which, being composed of flint, have perfectly retained their beautiful forms.

A GIANT.—Mr. Porter, the American giant, is living at Louisville, Ky., of which State he is a native. A clerical correspondent of the Christian Watchman lately paid him a visit, and says that he is perfect wonder in human shape, walking like an elephant, and looking like a man from another world. He measured eight feet and six inches in height.

© 1846 SCIENTIFIC AMERICAN, INC.





SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, APRIL 16.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics.

TO CORRESPONDENTS.—The communications of our friends, and the requests of those who require intelligence on various subjects, will not be neglected, though we can not always give them the required attention very immediately.

The mechanical movement by N. K. M. will appear next week. Also the plan of a bridge by C. D. W., of Hebron.

An illustration of the bottle for holding nitric acid, by J. F. J., is also prepared.

The favor of several other correspondents will receive due attention.

Science of Mechanics.

(Continued from No. 30.)

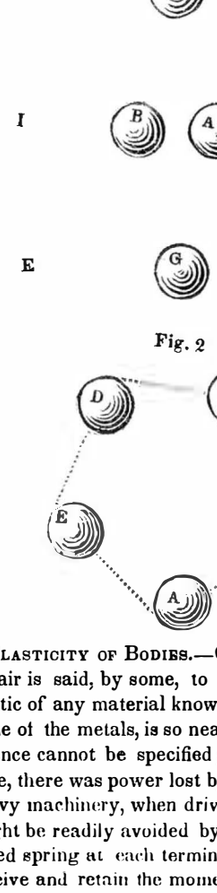
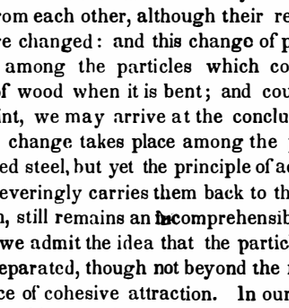


Fig. 2



ELASTICITY OF BODIES.—Compressed atmospheric air is said, by some, to be the most perfectly elastic of any material known; but the elasticity of some of the metals, is so nearly perfect that the difference cannot be specified; and if, as some suppose, there was power lost by a vibratory motion of heavy machinery, when driven by a crank, the loss might be readily avoided by adjusting a well tempered spring at each termination of the motion, to receive and retain the momentum of the vibrating parts of the machine. The elasticity of the surfaces of solid pieces of ivory, is nearly perfect, as will readily be attested by any one accustomed to the game of billiards, with ivory balls. The elasticity of the surface, even of ivory, is so nearly perfect, that when one ball is made to strike a second, and drive that against a third, the velocity of even the third balls is calculated on as being nearly equal to that of the first. When a piece of India-rubber or leather is bent, the particles constituting its distended surface are not in any measure separated from each other, although their relative positions are changed: and this change of position also occurs among the particles which constitute the fibres of wood when it is bent; and counting from this point, we may arrive at the conclusion that a similar change takes place among the particles of tempered steel, but yet the principle of action, which so perseveringly carries them back to their original position, still remains an incomprehensible mystery, unless we admit the idea that the particles are partially separated, though not beyond the reach of the full force of cohesive attraction. In our last article on this subject we described the effects of concussion of elastic balls, and shall now proceed to give a few more illustrations of the effects of concussion of elastic bodies. If two balls are placed together in the position of A B, and a third is rolled or thrown from the direction of C, the two first will proceed in the direction of E D, while the ball C will remain at the point F. If two balls are projected at the same time from the direction of C and G, and strike the balls A B, at the same instant, the latter will be projected in the direction of H I. Let four balls be placed at B C D E, fig. 2, and a fifth, A, projected in the direction of the dotted line: the momentum of the ball A will be transferred to B; and that of B to C, and so on to E, which will be projected directly to the point from which A was detached. On the subject of elascity, it has been remarked that the atmospheric fluid, is of all substances, the most perfectly elastic. We shall admit that the elasticity of air is very nearly perfect, if allowed to exert its expansive force immediately after compression; but if it is suffered to remain in a compressed state, for any considerable length of time, it looses in some measure its expansive force, in consequence of the escape of caloric, which constitutes a part of its elasticity. Compressed atmospheric air has has been talked of as a retaining power, or a retainer of power: but it has been satisfactorily proved by experiment that the most perfect retainer of power, is a coiled plate of tempered cast steel, on the fashion of a watch-spring. An unlimited quantity of surplus power may be accumulated in a set of springs of this kind, and held in readiness to be applied when most wanted. Springs of this kind may be attached to a carriage in such a manner as to accumulate power from the force of gravity, while the carriage is descending a hill, and this retained power may be applied in aid of ascending the next.

(These diagrams are supposed to be horizontal, and viewed vertically.)

(To be continued.)

Arts and Trades.

SMALTING.—We present an article on this subject in answer to a request from a correspondent.

There is a kind of blue glass, of a rich, deep blue color, which being broken to a coarse powder, is used in preparing the ground surface of signs, partly to produce a beautiful color, which can not be imitated with paint, and partly to produce a contrast with smooth glossy surfaces. The mode of applying this smalt (which can be procured at the color shops) is to paint the ground with a full coat of deep blue oil paint, and immediately strew the smalt over the whole surface. The smalt may be gently pressed down with a ball of cotton, and must remain undisturbed till the paint is dry: after which all the superfluous smalt, which does not adhere, is brushed off. Various other preparations have taken the name of smalt, although entirely dissimilar except in the mode of application. Black, red and green smalts are prepared by coloring common beach sand, by the following process:—Take one pound of ground paint, consisting of either lamp black, chrome green, or a mixture of red lead and Venitian red, ground in a mixture of one part of linseed oil with two parts of spirits of turpentine. Then add as much sand as the paint will conveniently moisten, mixing the whole together to the consistence of mortar. Place this mixture in an iron kettle over a fire, and constantly stir it about with an iron rod till the whole becomes dry; which process will ordinarily require an hour or more. The sand will thus become thoroughly colored, and ready to be applied to painted grounds in the manner described for the blue smalt. It will be understood that the ground is to be painted with a color corresponding with that of the small to be applied. Old bottles and fragments of fancy-colored glass, are some times broken up into coarse fragments, and cemented to the ground surface by a mixture of rosin with copal varnish. But this kind of work is not much in use at present.

PREPARATION OF PLASTER OF PARIS.—For ornamental stucco-work, the plaster may be procured ready ground, and prepared as usual for taking casts, &c., which is the state in which it is generally sold at the shops. A quantity of this fine plaster is put into an iron kettle and placed over a moderate fire, in a dry state, when it will soon commence boiling in appearance. It is to be stirred about with a stick occasionally, until ebullition ceases; then take it from the fire, and when cool mix it with water in which allum, in the proportion of one ounce to a quart of water has been dissolved. With regard to its consistence, the workman must so temper it as to suit his own convenience. If extraordinary strength is required a quantity of glue equal to that of the allum, may be also dissolved in the water before mixing with the plaster. A solution of glue may be used with advantage, in the casting of images or fancy figures; but the mixture thus tempered will not set so quick as it does without it. It should be understood that neither the alum nor glue are indispensable: many work without either. Another mode of preparation has been recently introduced, and is highly spoken of as working very free and smooth: it is termed the *marble cement* The ground plaster is calcined as above described, and after being mixed with the solution of alum, is diluted with water, and allowed to settle. The solution is then poured off and the plaster is dried, ground, and again calcined over a fire as before. Thus prepared it has only to be mixed with water to the proper consistence for working freely. It may be colored with ground indigo, yellow ochre, venitian red, or chrome green, mixed therewith, as occasion may require.

MOULDING HORN.—Mix together equal quantities of lime and clean wood-ashes: mix them with water, and dilute to the consistence of common white-wash. Shave the horn into thin shavings, and put it into this mixture, and let it remain two days. Then take it out and wash it; add more water to the lime and ashes, and when they have settled, pour off the clear water into another vessel, and put the horn into that liquor (lime and ash water) and gently boil it: the horn will then have become so soft that by pressure the parts will adhere together, and it may be moulded to any required shape.

FALSE PHILOSOPHY.—Of the frequent productions of ignorance and superstition, we have seldom seen a more ridiculous statement than the following, which has found its way into several paper, though we are glad to observe it does not meet with general favor, notwithstanding its marvelous countenance:—

"If a tallow candle be placed in a gun, and shot at a door one inch in thickness, it will go through without melting or sustaining the slightest injury. If a musket ball be fired into the water, it will not only rebound, but be flattened the same as if fired against a solid substance. A musket ball may be fired through a pane of glass, making a hole the size of the ball, without cracking the glass, and if the glass be suspended by a thread it will make no difference, and the thread will not even vibrate."

Don't you believe it.

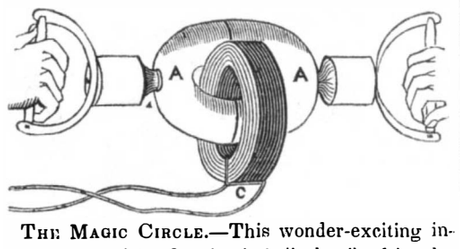
ADVERTISING.—This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics' tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies; our terms are moderate, and all favors in this line will be duly appreciated.

TO ASCERTAIN THE FULL POWER OF A WATER-FALL.—Multiply the number of cubic feet per minute by the height of the fall in feet, and divide the product by 550, and you will have the numbers of horse-powers. But few kinds of water wheels will give more than half the theoretic power of the water, however.

Drawings of machinery, engraving on wood, and lithographic drawings, neatly executed, at the lowest prices, at this office.

Galvanism.

Continued from No. 29.



THE MAGIC CIRCLE.—This wonder-exciting instrument consists of a simple helical coil of insulated copper-wire, (as shown at C in the cut,) the two ends of which wire are connected to the poles of a battery. The coil is about three inches in diameter, and consisting of from thirty to a hundred turns of the wire thus united to form the ring. Its greatest effect is shewn by means of two semi-circular armatures, A A, made of soft iron, and to each of which is connected a ring, or D, to be used as handles, or for the purpose of suspension. These armatures, having no magnetic property, indicate no attraction when placed in contact: but when one arm of each armature is placed within the magic circle, and in that position brought in contact, the magnetic adhesion between the two armatures will be so great as to require the full strength of two men to separate them. The magnetism in this case is induced by the galvanic fluid, or electricity, passing through the helical coil. For the better effect, in cases of exhibition, the battery should be concealed: and the helical coil may also be disguised, by being covered with a thin casing of wood. By an extended arrangement of this principle, a magnetic attractive power has been induced sufficient to sustain a weight of upwards of two thousand lbs. This magic ring or circle also possesses in itself a decided polarity; one side or face thereof being inclined north and the other south. If the ring is freely suspended, and the north pole of a permanent bar magnet is presented, made to approach one edge of the ring, the latter will instantly turn its south face towards the magnet, and will pass over the end of the bar towards its centre. But if the ring be held with its north face towards the pole, and the north pole of the magnet is passed through the ring in that position, the ring, when liberated, will move off over the end of the bar, and turn itself so as to bring its south face forward, and then pass on to the bar towards its centre. These motions appear very mysterious to persons unacquainted with the principles and construction: and if the ring is disguised as before-mentioned, and surmounted by a light image of some small animal, the phenomina will appear the more interesting, being apparently the voluntary movements of an animal.

(To be continued)

SCIENTIFIC PROGRESS RETARDED.—In speaking of the awkward construction and uncouth machinery of our naval steam-vessels, the *Sun* remarks: "This comes of listening to the inveterate prejudices of officers who obstinately refuse to advance with science of the age, instead of being guided by common sense. The only reason why we have not long ago been shamed out of countenance by our navy, is because it has not attempted to do any thing for the last thirty years but fire salutes and carry about ministers and consuls. These things have cost the people of the United States one hundred millions of dollars, which to all useful purposes might as well have been thrown into the sea." It is perfectly obvious, that many of those who are appointed to fill stations which, of all others, require a thorough knowledge of mechanical powers, motions and proportions, are almost totally ignorant on those points, having been appointed to office through a corrupt political influence, rather than from any regard to their qualifications therefor. The consequence is the waste of the public money by hundreds of thousands, and the disgrace of the nation, for the sake of gratifying intriguing demogogues and securing their influence in the next election. Yet there appears no other remedy than the reduction of the extravagant salaries of the principal officers to such a scale as to prevent such violent wrangling, with all manner of intrigue and false manœurves to obtain the first offices.

EFFECTS OF PUBLIC EXAMPLE.—The subjects or victims of capital punishment are often spoken of as public examples: and their executions are supposed to have a salutary effect on the public morals. It is stated of Wicks, who was lately executed for murder in England, that in conversation with the clergyman he stated that he had not only been a witness to the two last executions, at the Old Bailey, but had actually paid for a seat at the window of a house opposite, that he might view it the better. Such exhibitions are truly *public examples;* for in them, the authorities repeat the example of cold-blooded murder, which the spectators become so accustomed to see, that scenes of murder and blood cease to present any horror to minds thus custom-hardened. Every murder in public prepares the way for at least two in private.

A QUEER TRANSACTION.—A healthy young Irishman who was employed as gardener by a gentleman in New Jersey, so far gained the affections of his employer's daughter, that she eloped with him, came to New York, and was married. The father pursued them, had his daughter arrested and brought before Justice Daly, who, (as a matter of course) decided that the heiress must be out of her head thus to marry a poor man; and accordingly ordered her to be sent to the Insane Asylum. Whether Patrick, through ignorance of the law, will "give it up so," yet remains to be seen.

A PUZZLE.—[We are indebted to our friend D N. of Southington, for the following puzzle, and owe him an apology for delaying its insertion.]

There are eight weights, the combined gravity of which is 33 lbs; by the us of these weight with a common balance, or scales may be weighed any number of pounds and ounces, intermediate between an ounce and 33 lbs. Required the gravity of each of these weights? Answers (pre-paid) will be credited.

New Inventions.

THE ANNUNCIATOR.—The Rochester (N. Y.) American gives a description of an elegant and commodious instrument to be used in large hotels in the place of the ordinary bells. It is about the size of an ordinary parlor clock, and has an ornamental face-plate, upon which are figures indicating the number of the rooms. Within, the machinery is exceedingly simple and durable, consisting of springs, wires, &c., and a large bell. When a bell-pull in any room is drawn, a stroke upon the bell within the Annunciator gives warning, and instantly an index upon the face-plate moves, and continues to point to the number until it is re-adjusted by hand. Thus should no one be present, or even within hearing, the index will continue to indicate the room whence the call proceeded.

NEW WILLOWING MACHINE.—We have received from Mr. E. Bacon, of Newton Upper Falls, Mass., a description of the operation of a Willowing machine, now in operation, and we have been shown certificates from some who have used them, all of whom speak very highly in praise of the new machine. Its operation is both rapid and effectual in picking and cleansing cotton, wool, or curled hair; of cotton, especially, it willows or picks 800 *pounds per hour*, and in a very thorough manner. We shall procure a more perfect description of the peculiar construction of this machine for a future number.

WATCHMAKER'S DRILL.—Mr. J. Emery, of Buckport, Me., has sent us a drawing and description of an improved instrument by which the most minute holes in watch work may be drilled, perfectly true and central, and without the nice and delicate caution which is usually required. We can not fully describe the instrument without an illustration, but shall procure a cut of it as soon as the press of other matter will permit.

A WHEEL TIRE FURNACE.—We have received from Mr. A. Greggory of Pike, N. Y., a description and drawing of a newly invented furnace for heating carriage-wheel tires, preparatory to adjusting them on the wheels. We think it an excellent invention for blacksmiths, and shall present an engraving with a description thereof in a few days.

AN IMPORTANT DISCOVERY—OR HUMBUG.—A mode of ascertaining the altitude of the Sun in thick and cloudy weather, is said to have been recently made by a Mr. Ham, of Norwich, England. We have no principle on which such an invention could be based; and feel rather suspicious of such bull-stories in general: but if it is real, it must be valuable.

A NEW KIND OF FENCE.—A patent has been obtained by a gentleman of Northumberland, for a new kind of fence, which is said to be a great improvement. The posts are to be made of clay, burnt like brick. The patentee has already been offered $3,000 for his right.

OUR HUMBLE OPINION.—After all the succession and variety of demonstrations which have been presented to the public, of the pernicious and destructive effects of intoxicating liquors, and of the incalculable miseries thereby produced, it is our decided opinion that *no* person would continue either the manufacture thereof or traffic therein, but such as are bona fide, downright, perfidious, heartless (or black-hearted) knaves,—utterly unworthy of the respect or confidence, but deserving the contempt of respectable society. If any of our readers require a more full or highly seasoned expression of opinion on this subject, they must buy their pepper at some other shop.

ABOMINATIONS.—The several distilleries in Brooklyn are said to consume 840,000 bushels of grain per annum, in the nefarious business. If the indulgences by the people, of such wasteful nuisances does not deserve a famine on the country, it would be difficult to say what crime would deserve it.

PORK AFLOAT.—A gentleman who came over the Eastern Railroad one day last week, states that when crossing the bridge at Newburyport, he saw a full grown hog on a cake of ice, quietly floating out to sea. His precise place of destination is not known.

REAL ESTATE IN BOSTON.—The old store, No. 132 State street, with the land upon which it stands, was sold at auction lately for $16,350. The building is old and valueless. The number of feet of land is 674. This is over $24 per square foot for the land.

ANY CHANGE FOR THE BETTER.—A gentleman while sipping his beverage at the breakfast-table of a boarding house in Baltimore, enquired of the landlady whether it was tea or coffee. "Why do you ask that question?" she inquired. "Because," replied the gentleman, "if this is coffee I prefer tea; and if tea, give me coffee."

UP AGAIN!—The proprietors of the bridge at Bangor, and the owners of the dam over the Kennebeck at Waterville, have already both called meetings for early measures to replace those structures. At Waterville it is now proposed to carry the dam entirely across the river. Heretofore it was only a side dam.

A VALUABLE LOG.—A Belize paper describes a log of mahogany recently brought to that settlement, and about to be shipped for England. It is 19 feet long, 5 feet wide, and 4 feet 2 inches deep. Its measurement is 4750 feet, and it exceeds 12 tons in weight.

TIRREL'S TRIAL FOR ARSON.—This trial is expected to come on early in June. He will also be subject to another trial on the charge of adultery, but will probably get clear on the plea of somnambulism;—asleep all the while.

A MONEY SAFE.—An Albany auctioneer in offerring a bible for sale, recommended it as furnishing a first rate deposite of bank notes: for, said he, "very few persons ever think of looking in the bible for any thing.

VARIETY

A breach of promise case came up before the Sheriff's Jury, in this city, last week, in which the fair plaintiff, a young and beautiful lady of unblemished character,—was comforted with an award of $3,000.

A bill is before the Massachusetts Logislature for incorporating a Magnetic Telegraph Company, and providing for the punishment of persons who may injure the line. The penalty is $500 fine and five years imprisonment.

During the recent freshet a pine tree having been washed from its original foundation, has transplanted itself in the middle of the St. Johns River, where it stands erect, with its head about thirty feet above the water.

Charles Dickens receives forty guineas per week for his contributions to the London "Daily News," although not a proprietor. Some editors would think themselves well paid at that price.

A new kind of candles have been recently introduced in this city, and are said to be superior to either wax or sperm. They are very hard and white, and are called the adamant pearl candles.

The most simple and ready method of destroying either red or black ants, is to place in their way a shallow vessel of sugar and water. In their eagerness to drink they will drown.

A floating theatre is being constructed at Cleveland, O., to travel between that port and Chicago. There are said to be thirty-five towns and villages on its route, containing in all 100,000 inhaitants.

The Louisville Journal says that there is no doubt that that city will soon be supplied with hydrant water, from water works. The City Council have made arrangements to proceed with the work.

A new paper mill is in progress of erection at the great falls of the Westfield river in Russel, about 20 miles west of Springfield. There is an abundance of water-power and excellent facilities.

A new brig, 135 feet keel, and measuring 350 tons, has been built at Milwaukie, W. T., and is now about ty receive her first cargo at South Port. Success to the Western enterprise.

The toothache may sometimes be immediately removed by immersing the feet in cold water. So says an exchange paper, and the experiment is easily tried, and without danger.

Napoleon Bonaparte, at his death, left a great variety of papers, with a request that they should not be published till 25 years after his death. They are now about to be published.

The town (now city) of Brooklyn, as late as 1814, contained only 3,805 inhabitants. In 1825 it had increased to 10,971: last year, 1815 it contained 50,294, and is rapidly increasing.

The whole number of children attending the public schools in this city, for the past year, was seventy-one thousand one hundred and thirty-four. The number should have been 100,000 at least.

The Magnetic telegraph is about to be established from Boston to Portland, by way of Haverhill and Dover; the requisite funds having been obtained for that purpose.

Four young men were recently sentenced in Canada, to four months imprisonment, for speaking profane against the *Pope*, while returning from a parish church on Sunday.

An excellent improvement is to be made in this city by the opening of Gold street, through rose to Madison street. The opening of William street to Chatham will of course follow.

The Emperor of Russia has ordered schools for the education of the children of Jewish subjects; the tuition to be exclusively under teachers of the Jewish religion.

The Galena Jeffersonian says that in March, just before the opening of the navigation of the Mississippi, the amount of lead *corded* up on the wharves at Galena, was as large as EIGHT MILLIONS of lbs.

The Carpet manufacturing establishments in Auburn, N. J., employ 800 hands, work up 300,000 lbs. of wool per annum, and produce 10,000 yards of carpeting—much of it Saxony—per month.

One of the daily papers recommends to the incendiaries of New York, that as they have been so very unsuccessful in their various attempts of late, they give up the business altogether.

It is stated that some of the gin palaces of London have been known to take at the rate of four dollars per minute, for gin, from poor laboring men who were going home from their work.

Virginia has already nearly twenty woollen manufactories, and the products of her cotton manufactories amount to more than $500,000 per annum

A highway robber demands your money or your life. A rum-seller demands your money *and* your life. Mark the difference.

The Great Western railway from London to Bristol is 118 miles in length, and cost £6,677,125; (about $32,000,000) or $233,000 per mile.

A pauper of a Pennsylvania Alms House is said to have run away with, and married one of the Keeper's daughters.

A project has been started recently for the construction of a canal between Rock river and Fond du Lac: an important channel of trade will thus be opened by connecting the Rock and Fox rivers.

A meeting of the Colonization Society was held last week at the Tabernacle in New York, when about $700 was raised for the support of the slaves re-captured on board the bark Pons.

© 1846 SCIENTIFIC AMERICAN, INC.

For the Scientific American.

A Dream.

BY AN APPRENTICE.

A dream I had—says you what was it,
Well now, I'll tell you 'fore I lose it.
Last night I had a drunken spree.
Now I and liquor can't agree,
So that accounts for it you see,—
Now don't it ?

I dreamed that as I lay in bed
Strange visions, flitted through my head,
And up the old boy popp'd in view :
Said he, young man, how do you do ?
Quite well, said I, and how are you ?
Said he, I'm better.

I think, said he, you're rather bold,
But now my business I'll unfold.
'Tis you I'm after here to-day,
And you must leave your house of clay ;
Come, come, be quick, make no delay !
Said I, you don't tho'.

For one year longer I do plead,
Said I, that time I really need,
To settle all my old affairs,
And off my mind throw all my cares,
And give my money to my heirs.
I do, 'pon honor.

Said he, I grant,—but you remember,
That on the first of next December,
I'll be here with my gayest team,
(A short year quite to you 'twill seem,)
And I awoke——'twas but a dream.
So there you have it.

Song of the Ship-Builders.

BY J. G. WHITTIER.

The sky is ruddy in the East,
The earth is gray below,
And spectral in the river mist
Our bare, white timbers show,
Up!—let the sound of measured stroke
And grating saw begin :
The broad-axe to the gnarled oak,
The mallet to the pin !

Hark!—roars the bellows, blast on blast,
The sooty smithy jars,
And fire-sparks rising far and fast
Are fading with the stars.
All day for us the smith shall stand
Beside that flashing forge !
All day for us his heavy hand
The groaning anvil scourge.

Gee up !—Gee ho !—The panting team
For us is toiling near;
For us the raftsmen down the stream
Their island-barges steer.
Rings out for us the axe-man's stroke
In forests old and still,—
For the century-circled oak
Falls crushing down his hill.

Up!—up!—in nobler toil than ours
No craftsmen bear a part;
We make of Nature's giant powers
The slaves of human art.
Lay rib to rib and beam to beam,
And drive the trunnels free;
Nor faithless joint nor yawning seam
Shall tempt the yawning sea !

Where'er the keel of our good ship
The sea's rough field shall plough—
Where'er her tossing spars shall drip
With salt spray caught below—
That ship must heed her master's beck,
Her helm obey his hand,
And seamen tread her reeling deck
As if they trod the land.

Her oaken ribs the vulture-beak
Of Northern ice may peel—
The sunken rock and coral peak
May grate along her keel ;
And know we well the painted shell
We give to wind and wave,
Must float, the sailor's citadel,
Or sink, the sailor's grave !

Ho !—strike away the bars and blocks,
And set the good ship free !
Why lingers on these dusty rocks
The young bride of the sea ?
Look !—how she moves adown the grooves
In graceful beauty now !
How lowly on the breast she loves
Sinks down her virgin prow !

God bless her, wheresoe'er the breeze
Her snowy wing shall fan,
Aside the frozen Hebrides
Or sultry Hindostan !—
Where'er, in mart or on the main,
With peaceful flag unfurled,
She helps to wind the silken chain
Of Commerce round the world !

Speed on the ship !—But let her bear
No merchandize of sin,
No groaning cargo of despair
Her roomy hold within.
No Lethean drug of Eastern lands,
Nor poison draught for ours,
But honest fruits of toiling hands
And Nature' sun and showers.

Be her's the Prairie's golden grain,
The Desert's golden sand,
The clustered fruits of sunny Spain,
The spice of Morning-land !
Her pathway on the open main,
May blessings follow free,
And glad hearts welcome back again
Her white sails from the sea !

NEW IRON ESTABLISHMENT.—The construction of some extensive iron works at Allentown, Lehigh Co., Pa., was commenced on Monday last, 6th inst.

SYMBOLICAL HEAD AND PHRENOLOGICAL CHART.

From the American Phrenological Journal.

(Published by FOWLER & WELLS, 131 Nassau street, New York.)

EXPANATON OF THE HEAD.—The design is to represent the natural language of each organ of the Brain, according to their numbers: as for example, No. 7—Destructiveness,—by the Tiger killing the Lamb. No. 8—Appetite—by two persons eating and drinking. No. 6—Combativeness—by two boys contending. No. 15—Conscientiousness, the Scales of Justice, &c. &c. The utility of which may be known by referring to the prospectus in another column.

Arrangement, Numbering, and Definition of the Organs.

DOMESTIC PROPENSITIES.—1. *Amativeness*: The passion of love and attraction between the sexes as such ; desire to caress and fondle.

2. *Philoprogenitiveness*: Parental love; regard for children, pets and animals,and attention to their wants.

3. *Adhesiveness*: Frendship ; attachment ; affection: desire for society, to congregate, to associate, and to entertain friends.

4. *Inhabitiveness*: Love of home ; patriotism attachment to the place where one lives, or has lived ; desire to locate and remain in one place.

A. *Matrimony*: Desire to pair; to unite for life ; and to be constantly in the society of the loved one.

5. *Concentrativeness*: Unity and continuity of thought and feeling ; disposition to dwell upon one subject until it is completed.

SELFISH PROPENSITIES.—6. *Combativeness*: Self-protection ; defence ; personal courage ; resistance; boldness ; resolution ; the let-me-alone disposition.

7. *Destructiveness*: Executiveness; energy ; indignation ; hatred ; retribution ; and a destroying, pain-causing, exterminating disposition.

8. *Alimentiveness*: Appetite ; desire for nutrition, and enjoyment of food and drink.

9. *Acquisitiveness* : Desire to acquire and possess money, property, &c.; to trade; to save and take care of property ; the mine and thine feeling.

10. *Secretiveness*: Secresy ; concealment; cunning; evasion; policy; management; ability and disposition to disguise, and play the opossum.

SELFISH SENTIMENTS, OR ASPIRING GROUP.—11. *Cautiousness*: Sense of danger ; precaution; solicitude ; fear ; apprehension , regard for present and future safety ; dread of results.

12. *Approbativeness*: Regard for character and reputation; ambition ; affability ; desire for popularity, fame, and distinction.

13. *Self-esteem*: Self-respect; dignity ; independence; love of liberty and power; self-reliance; desire to rule and command respect.

14. *Firmness*: Will ; decision ; stability; perseverance ; determination; fixedness of purpose, and unwillingness to yield or change ; fortitude.

MORAL SENTIMENTS.—15. *Conscientiousness* :—Sense of moral obligation ; regard for duty ; justice ; integrity ; right ; penitence for sin.

16. *Hope :* Sense of immortality : of a future state ; a looking for future results ; and confidence in success and happiness.

17. *Marvellousness :* Faith ; belief in Divine Providence ; sense of the omnipresence of God ; of spiritual existence ; wonder ; surprise ; love of the marvellous and new.

18. *Veneration* : Worship of God ; feeling of devotion and respect ; regard for superiority, things sacred, authority, and antiquity.

19. *Benevolence* : Kindness ; humility ; sympathy ; pity ; disinterestedness of feeling ; munificence ; desire to make others happy, and do good.

PERFECTIVE, OR SEMI-INTELECTUAL SENTIMENTS. 20. *Constructiveness* : Contrivance ; skill; ingenuity ; desire to use toolss and understand machinery ; manual dexterity.

21. *Ideality*: Refinement ; delicacy of feeling ; taste ; love of perfection in nature, art, and composition ; ecstacy.

B. *Sublimity* : Sense of the vast, grand, sublime, extravagant, terrific, endless, the wild romantic in nature, art, and composition, particularly natural scenery.

22. *Imitation* : Power of imitating, copying, and representing ; versatility of action ; doing as others do ; describe and act another's part.

23. *Mirthfulness* : Sense of the absurd and ridiculous ; ability to joke, make fun, and ridicule ; gaiety ; levity; playfulness ; humor.

INTELLECTUAL FACULTIES. 24. *Individuality*: Observation of things, and power to examine ; to identify individual objects; to be an eye-witness ; curiosity.

25. *Form* : Recognition of shape, likeness, or outline ; memory of countenance and configuration ; ability to commit to memory.

26. *Size*: Perception of bulk, magnitude, and proportion ; ability to judge of length, breadth, height, angles, perpendicular, and distances.

27. *Weight* : Sense of gravity, and power to apply its principles to machinery and muscular motion ; shooting ; balancing ; walking on ice.

28. *Color*: Sense of colors, their different shades, and harmony in their arrangement in nature and painting ; delight in seeing them.

29. *Order*: Arrangement; system ; neatness; method ; desire for convenience and method, and economy in business operations.

30. *Calculation* : Perception of numbers and their relations ; numerical computation ; ability to reckon figures in the head.

31. *Locality*: Memory of place, location, direction ; where we have seen persons and things ; the geographical faculty.

32. *Eventuality*: Sense of active events; love of experiments ; desire for knowledge and information ; fondness for narrations of occurrences.

33. *Time* : Knowledge of chronology; of the duration and lapse of time ; memory of when, and how long ; equality in step, and the beat in mrsic.

34. *Tune*: Perception of sound, melody, and proper emphasis in reading, speaking, or singing; ability to compose music.

35. *Language* : Ability to talk ; to communicate ideas ; to use appropriate language ; versatility of expression ; memory of words.

REFLECTIVE OR REASONING INTELLECT. 36. *Causality* : Perception of the causes of things ; the why and wherefore ; power of abstract thought ; penetration ; planning : originality.

37. *Comparison* : Sense of resemblance; ability to analyze, classify, compare, infer; critical acumen : inductive reason.

D. *Agreeableness ; Pleasantness—Suavity* : Ability to adapt ourselves to all kinds of society.

C. *Human Nature, or Sagacity* : This faculty gives us an intuitive perception of the motives of others.

BENSON'S WATER RAM.—We alluded to this subject a few weeks since, under a rather unfavorable impression derived from a large quantity of dry puffing, without any form of description. We have recently, however, received what purports to be a description, supposed to be from the inventor, Mr. B.S. Benson, Jerusalem Mills, Maryland. The description is illustrated by an engraving, without the use of which, it would be useless for us to attempt to describe the invention: indeed it is difficult to understand the arrangement, even with the aid of the illustration. It appears to be calculated to raise a small column of water from a spring, by a power to be derived from a small brook of running water, where a few feet of head or fall may be had, and that without the use of a water wheel. We have no disposition to doubt that a Maryland farmer, (as the writer styles himself) may produce as useful an improvement as a down-east Yankee: indeed this plan evinces much ingenious originality in its contrivance, whether it proves useful or not. We are not informed whether the invention is any where in operation ; nor can we yet understand how it can be made to operate. But if it does or can work we wish the ingenious inventor abundant success, and will cheerfully do whatever we can to advance the popularity of the invention and bring it into general notice. The drawing and description of the *Ram* may be examined at this office.

MILEAGE IN PROSPECT.—The distance from New York to the mouth of the Columbia River, Oregon, is 15,000 miles. The mileage of an Oregon Member of Congress will be about 12,000, according to the usual mode of computing mileage.

A HAPPY EXPEDIENT.—A faithful friend once told me, that, amongst other spmptoms of high nervous excitement, he had been painfully harrassed for the want of sleep : to such a degree had this proceeded, that if, in the course of the day, any occasion led him to his bed-chamber, the sight of his bed made him shudder at the idea of the restless hours he had passed upon it. In this case it was recommended to him to endeavor to fix his thoughts on something, at the same time vast and simple—such as the wide expanse of the ocean, or the cloudless vault of heaven—that the little hurried and disturbing images that flitted before his mind might be charmed away, or hushed to rest by the calming influence of one absorbing thought. Though not at all a religious man at the time, this advice suggested to his mind, that if an object at once vast and simple was to be selected, no one could serve his purpose so well as that of God. He resolved to make the trial and think of Him. The result exceeded his most sanguine hopes : in thinking of God he fell asleep. Night after night he resorted to the same expedient. The process became delightful ; so much so, that he used to long for the usual time of retiring, that he might fall asleep, as he termed it, in God. What began as a mere physical operation, grew, by imperceptible degrees, into a gracious influence. The same God who was his repose by night, was in all his thoughts by day.—*Ex.*

PRESERVING IN SPIRITS.—A man named Austin, who recently died in Canada, had been in the habit for some time past, of drinking thirty glasses of ardents each day. He thought to preserve himself in spirits, but the experiment failed.

GAIETY.—There are two kinds of gaiety: the one arises from *want* of heart; being touched by no pity, sympathizing with no pain, even of its own causing, it shines and glitters like a frost bound river in the gleaming sun. The other springs from *excess* of heart; that is, from a heart overflowing with kindness towards all men and all things ; and suffering under no superadded grief, it is light from happiness which it causes, from the happiness which it sees. This may be compared to the same river sparkling and smiling under the sun of summer, and running on to give fertility, and increase to all within, and even to many beyond its reach.

FOWLER'S PRACTICAL PHRENOLOGY.—This extraordinary work,—a volume of 430 pages, and which has already passed through *thirty-four editions*,—illustrates the true science of Phrenology in a manner to be readily understood by any attentive reader ; and so comprehensive as to enable any student thereof to practice this science either for amusement or advantage. This work is published and for sale by Fowler & Wells, 131 Nassau st., N.Y.

ROBINSON & Co., dealers in periodicals at New Bedford, Mass., in the rapid and extensive introduction and circulation of our paper in that town and vicinity, have evinced a business efficiency rarely to be found in that line. They are doing a large business, and publishers of periodicals may think themselves fortunate in finding such active and influential agents.

BUDE LIGHT.—It is contemplated to place a bude light in the tower of the new barge office, at Whitehall. It will give a brilliant light and be very useful in dark nights.

Do they believe it ?

It is well known that a very large majority of professed christians and church members in this country, poofess to believe, firmly and without a doubt, that every human being, (infants excepted,) who leave this world in an irreligious or unconverted state, is and will be condemned and subjected to intolerable, excruciating tortures and torments of hell-fire, fire and brimstone, or agonies equal to that of burning the living flesh in literal fire ; and this torment to continue without cessation, forever and ever!!! We are not disposed to discuss this question, whether this horrible doom—at the thoughts of which the rational heart sickens,—will befall the impenitent, or otherwise :—whether the sacred scriptures do or do not prove and authorise such doctrine : but we ask, Do they believe it? Do those who profess this doctrine, really believe in their hearts that their beloved parents, brothers, sisters, wives and children, who die without being converted, or becoming pious, or even those who die in the midst of profanity and wickedness, will be unavoidably subject to this insufferable, never-ending torment? The lamented Dr. Payson sometimes expressed wonder, (as well he might,) at his own apathy and want of feeling for the souls of others, while, as he expressed it, they were dropping into hell around him. And nothing appears to us more self-evident, than that if those people who profess to believe this doctrine, do in reality believe it, and are nevertheless, instead of being distracted with terror and anguish for their associates, are able to think of any thing else, or attend to the ordinary business of this life, these are of all people the most hard-hearted and unfeeling. We think it strange that the Southern people can calmly look on, while the lash is applied to the back of a poor slave, and hear his cries. We even feel (to use a common phrase) our hearts bleed at the recital of such things; but what is this in comparison with the fiery torment, unceasing forever! When a man sees his child, or even his neighbor, upon a house top, while the body of the building is enveloped in flames, he becomes desperate in his anxiety and efforts to save him. Could he lie down and compose himself to sleep under snch circumstances? Most assuredly not. How then can he sleep while he believes that some of his late associates are already suffering the most horrible agony in fire, and others about to follow? The fact is plain ; he *does not believe it*. He may profess to believe,—try to believe,—and even persuade himself that he does believe it: but the evidence is plain that he does not believe a word of it. For if he did believe it, he could neither eat nor sleep; nor think of any thing else but to remonstrate, expostulate, entreat, and persuade his fellow men to abandon all worldly pursuits till they should obtain evidence of their own salvation from such horrible doom; and then to devote their lives and strength in persuading and reclaiming others.

They do not believe it.

For the Scientific American.

SOUTHFIELD, N. Y., April 13, 1846.

Brother Porter,—In your paper of April 2, you gave an article which you termed "A Parable." Now I will give you a statement of facts, to which I was personally a witness. It was once my lot to be a Methodist minister, and to labor among the slaves of the South. Some eleven or twelve years ago a brother Mathews and myself held a class meeting with a small company of converted slaves, in a log cabin on a rice Plantation, in the dead hour of a cold cheerless night. In number there were perhaps twenty—about an equal number of each sex. Brother Mathews opened the meeting with singing and prayer; and then spoke to the females, among whom there was one very old woman, who manifested great love for her Savior ; she pointed to a large wood fire that was burning on the hearth and said, "Dar, I love my Savior so, I could go right through dat fire, if I might go to him." Bro. Mathews enquired her name, to which she answered, "Eve ;" he then asked her age she answered, "Me hardly know: me very old—most hundred—but me can go through de fire for the love of Jesus." After brother Mathew had done speaking to the females, I then addressed the men. I had spoken to about two or three when I came to a very old looking man, who spoke with much fervor, and who said his name was Adam,—that he was most a hundred years old : that Eve was his wife, and that if she could go through the fire for the love of Jesus, he could follow her, and go through the fire too. I gave Adam and Eve the best advice of which I was capable, but have never had my faith so severely tried before nor since with regard to my own standing in the true life of religion.

A SUBSCRIBER AND CONSTANT READER.

SUNDAY PAPERS AND THE CLERGY.—Time has been when the pious clergy of this city—who, by the way, usually attach more importance to the keeping of the fourth commandment according to modern tradition,than to obeying the gospel,—were somewhat opposed to the publication of worse than secular Sunday papers, and the clamor of newsboys in *bawling* them about the streets. But now that the practice has prevailed, the reverend clergy fall in with, and countenance the practice by publishing in even the most exceptionable of these Sunday papers, notices of their own sermons and the subjects thereof, and the churches in which these discourses are to be delivered. In a late number of the Sunday Herald, we observed no less than ten such notices, of clerical discourses, by these reverend performers ; among them the Rev. John Dowling, pastor of the Baptist Church, &c. We do not write on this subject by way of complaining: for we have no apprehensions of any falling away, or becoming less religious among the reverends; but we discovered sufficient novelty in the case to authorize a passing remark on the subject, if nothing more

© 1846 SCIENTIFIC AMERICAN, INC.

General Agents.

Colon & Adriance, 28, 29, 30, 31 Arcade, Philadelphia.
Hotchkiss & Co., 13 Court street, Boston.

Local Agents.

Maine.—Shipley W. Ricker, South Berwick; C. D. Bearce, Portland.
New Hampshire.—J. A. Fay, Keene; Wm. O. Ruggles, Hanover; C. M. Smith, Manchester; J. Buffam, Nashua; D. L. Norris, Dover.
Vermont.—Thomas Boynton, Windsor.
Massachusetts.—S. Thompson, Worcester; B. Perry, Salem; W. P. Seaver, Taunton; P.W. Tenny, Newburyport; Otis Cary, Foxboro; W. Robinson & Co., New Bedford; W. S. Barker, Medford.
Rhode Island.—Daniel Cobb, Providence; H. J. Pitman, Bristol.
Connecticut.—Peter Cook, Hartford; E. Downes, New Haven; William Woodward, Middletown; S. Jones, Colchester; J. Hunter, Thompsonville; H. S. Snow, Meriden; Safford & Parks, Norwich; O. P. Butler, Northfield.
New York.—T. Dickinson, Newark; T. S. Hawks, Buffalo; G. W. Hildreth, Lockport; William M. Beauchamp, Skaneatles; M. Nevin, 158 Fulton street, Brooklyn; M. S. Leonard, Oswego.
New Jersey.—J.L. Agens, No. 1 Commerce street, Newark; J. M. Francis, Hoboken; Alfred Walling, Keyport; Lees Garside, Corner of Main and Market sts, Paterson.
Maryland.—S. Sands, 122 Baltimore st., Baltimore.
District of Columbia.—W. H. Ward, Washington.
Georgia.—Chas. O'Neal, Darien.
Florida.—Major J. Nathans, Quincy.
Illinois.—G. W. Arnold, Peru.
Ohio.—Col. A. P. Chesley, Huron.
Wisconsin Territory.—Norris Hubbard, Southport.

Travelling Agents.

Clark Selleck. J. A. Lattin. Stephen J. Payne.

General Patent Agency.

THE subscriber has established an agency at his Warehouse, 12 Platt street, New York, for the protection and general advancement of the rights and interests of Inventors and Patentees.

The objects of this agency are more particularly to aid and assist Inventors and Patentees in effecting sales of their inventions and of goods and wares made therewith—and also for the sale and transfer of Patent Rights.

Arrangements have been made with a lawyer familiar with the Patent Laws, who will attend to the legal branch of the business upon reasonable terms. Satisfactory references will be given. Applications may be made to the undersigned personally, or by letter, *post-paid.*

SAMUEL C. HILL,
apr16 3m* *General Patent Agent.*

PHRENOLOGY.

PROSPECTUS OF VOLUME IX., FOR 1847,
OF THE
AMERICAN PHRENOLOGICAL JOURNAL.
O. S. FOWLER—Editor.

To reform and perfect Man—to develope, by culture, the original beauties and capabilities of his nature—is a work the most arduous and exalted that can possibly engage human intellect or effort. To do this effectually, however, his nature must be known; and since Phrenology and Physiology imbody his entire constitution, there is no way by which we can so easily become acquainted with ourselves, or for what occupation in life we are best qualified, as by the aid of these sciences.

To these subjects, and their various applications will this Journal be devoted. It will present,

Phrenology,

Each number will analyze one or more of the phrenological organs, both singly and in their various combinations, illustrated by engravings, showing their location. Each number will also contain the Phrenological developments and character of some distinguished individual, accompanied by their likeness. This department will give just that *practical* view of Phrenology which is required in order to fully understand its proper application.

Physiology,

To know and obey those laws of life and health, unfolded by these sciences, constitutes the main basis and superstructure of talent, virtue, and happiness. This department will also be illustrated by engravings.

Animal Magnetism,

Will receive its due attention; and our readers will receive, through this medium, all that is new, interesting and important.

Woman,

Her character, influence, sphere, and consequent duties; the government and education of children, &c., will be presented in this Journal.

Our field is indeed the world, physical, intellectual, and moral. Human improvement and happiness we shall endeavor to promote. Those, therefore who are interested in the advancement of our race, and would ameliorate their condition, may do so, perhaps more effectually by circulating this Journal than by any other means; for it will imbody the principles of all reform.

This work will be issued monthly, containing thirty-two or more pages on good type and paper, at the extreme low price of $1.00 per year, in advance.

Subscriptions should, in all cases, be addressed, post paid, to FOWLER & WELLS,
Phrenological Cabinet, 131 Nassau st., N.Y.

Editors and Postmasters are authorised Agents for this work.

Editors who will give the above three insertions, or who will notice the Journal regularly, shall be entitled to an exchange.

A liberal discount will be made to agents & clubs.

Sample Numbers of the work will be sent *gratis* when requested. apr16.

Patent Agency at Washington, D. C.

ZENAS C. ROBBINS,
Mechanical Engineer and Agent for procuring PATENTS,

Will prepare the necessary Drawings and papers for applicants for patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the patent laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars,) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, will be promptly communicated.

All letters on business *must be* post paid, and contain a suitable fee, where a written opinion is required.

Office on F street, opposite the Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Commissioner of Patents; Hon. H. L. Ellsworth, late ditto: Judge Cranch, Washington, D.C.; Hon. R. Choate, Massachusetts, U. S. Senator; Capt. H. M. Shreve, Missouri; H. Knowles, Machinist, Patent Office. april 2.3m*

GALVANIC APPARATUS.

DANIEL DAVIS, Jr., 428 Washington street, Boston, manufactures all the variety of philosophical apparatus, connected with Magnetism, Galvanism, Electro-magnetism, and Magneto Electricity. He has constantly on hand a variety of Electro-magnetic machines, permanent magnets, Galvanic Batteries, &c. For sale on the most liberal terms. nov18

Plumbe National Daguerrian Gallery,

AND PHOTOGRAPHIC DEPOT,
251 *Broadway, corner of Murray street, New York,*
(over Tenney's Jewelry store,)

Awarded the Medal, four first premiums and two "highest honors," at the exhibition at Boston, New York, and Philadelphia, respectively, the best pictures and apparatus ever exhibited.

Price of these superb photographs reduced to that of ordinary ones at other places, so that no one need now sit for an ordinary likeness on the score of economy,—taken in any weather.

Plumbe's premium and German Cameras, Instructions, plates, cases, &c. &c., forwarded to any desired point at lower rates than by ony other manufacturer.

Wanted—two or three skilful operators. Apply as above. jny29

CUMMINGTON QUINEBAUG SCYTHE STONES.

From the celebrated Robbins' Ledge.

MANUFACTURED by J. S. STAFFORD & CO., Cummington, Mass.—The unprecedented sale of the Cummington Quinebaug Seythe-stones, during two years, has fully established their claim to superiority over all other stones now in use, and renders unnecessary any recommendation from the proprietors.

☞ A continuance of public patronage is respectfully solicited. All orders addressed to J. S. Safford, or Jacob Morse, (sole proprietors,) or Stephen Morse, Agent, Cummington, Mass., will meet with prompt attention.

For sale at all the principal hardware stores. nov9

TEETH.

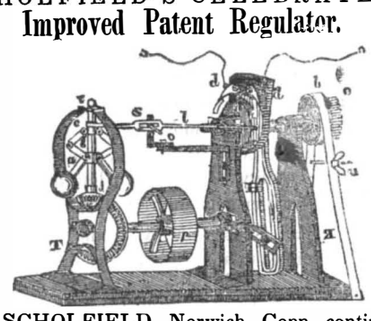
THE cheapest office in this city for Dental operations is Dr. Brown's, 280 1-2 Broadway, between Reade and Chambers st.

Natural and mineral teeth inserted from	$1 to 3 50
Decayed teeth filled with white cement, and warranted useful for mastication,	50
Toothache cured effectually without pain,	50
Teeth extracted with less than half the usual pain	50

Dr. BROWN,
280 1-2 Broadway, 3 doors above Chambers, next to Stewart' & Co.'s new store.

References can be had from several hundred families, also to the medical faculty of the city. nov18

SCHOLFIELD'S CELEBRATED Improved Patent Regulator.



N. SCHOLFIELD, Norwich, Conn., continues to manufacture, and keeps constantly on hand, his Improved Patent Regulators, for water-wheels and steam engines; he makes five different sizes, indicated by numbers comencing at the largest size, which is called No. 1, &c..

They are built in a neat and compact form, and printed directions accompany each machine, which will enable any mechanic to put them in operation; as a general rule the different numbers are adapted to different sized wheels, as follows;

For over-shot or breast wheels, 3 feet buckets, No. 5; 5 or 6 feet buckets, No. 4; 6 to 10 feet buckets, No. 3; 8 to 15 feet buckets, No. 2; 12 to 20 ft. buckets, No. 1; greater than 20 feet, No. 1 extra.

The following agencies have been established for the sale of these machines:—Jones, Denney & Ward, Boston; V. J. Bates & Co., Providence, R. I.; Charles Schenck, New York city; D. Wight & Son, Troy, N. Y.; R.M. Vansickler, Albany, N.Y.; S.C. Bemis, Springfield, Mass.; Denslow & Beach, Hartford, Conn.; Joseph B. Hughes, Philadelphia; Wells Chase, and Towner Dunlap & Co.; Baltimore.

N. Scholfield also builds to order Bacon's Improved Pickers, a superior article for cotton or wool.
Norwich Conn., Feb. 14. f15eowtf.

Book for Mechanics.

THE ENGINEER'S AND MECHANIC'S COMPANION.

Comprising Weights, Measures, Mensuration of superfices and solids, tables of squares and cubes,—square and cube roots, circumference, and areas of circles, the mechanical powers, centres of gravity, gravitation of bodies; strength, weight, and crush of materials; waterwheels; hydrostatics, hydraulics, statics, centres of percussion and giration; friction, heat, tables of weight and metals; pipes, scantling, and interest; steam and the steam engine.

By J. M. SCRIBNER, A. M.

Recently published, and for sale by
HUNTINGTON & SAVAGE,
216 Pearl st., price $1,12 to $1,50.
jny1

FREE EXHIBITION,

Persons are invited to call and see their own

PORTRAITS,

IN DAGUERREOTYPE,
to purchase or not, at their pleasure, at
A. SEALEY & ROGER'S
Daguerrean Room, Southeast corner of Broadway and Fulton street,
(Entrance 156 Fulton,) New York.

Plain Portraits, including morocco case, $1 00; colored do. $1 50. feb4

Levi Chapman.

No. 102 William Street, New York.
Manufacturer of the
CELEBRATED MAGIC RAZOR STROP
of four sides.
Also, Pocket Books, Wallets, &c.
On the most extensive scale.

L. C.'s facilities for manufacturing Pocket Books, or Wallets, for the supply of those wholesale dealers who buy to sell again by the gross or dozen, are unequalled, he having employed for the last ten years from 50 to 270 workmen. His present well regulated system of *division of labor,* enables him to supply these articles at a very great reduction, at least one third less than former prices.

Strops retailed at from 50 cents to $1,00 each, varying only in outward finish and size—warranted to please or the money returned. jan22.

A. G. Bagley's Celebrated Improved EVER POINTED GOLD PEN.

THIS Pen received the highest premium at the last Fair of the American Institute, and has been pronounced by the first teachers of Penmanship in the country to be infinitely superior to any Gold Pen ever before introduced to the American public. The lasting properties of this Pen are undoubted, owing to the total absence of corrosibility from any of the inks in use, and the peculiar shade of the nibs, (which was first introduced by Bagley, (makes it more pleasant to use, renders it less liable to damage, more easy to repair, and prevents the necessity of the great care that other articles of the kind require.

MANUFACTORY, 189 Broadway, N. Y. nov9.

Farnam's Patent Hydraulics.

D. L. FARNAM,
(29 FULTON STREET, N. Y.)

MANUFACTURES Cast Iron Fountains in great variety, at prices from Five to Five Thousand Dollars;—also Lift and Force Pumps, calculated to raise from ten to six thousand gallons per minute, and fitted for every variety of purpose for which they can be required. Fire Engines, of superior powers; Leather Hose, Wind Mills, Water Wheels, Horse Powers, Lead Pipe, Air Pumps, Brass Work, &c. &c.

D. L. F. has pulished a work on the subject of Hydraulic apparatus, Fountains, &c., which contains much useful and practical information, and among others 18 cuts of Fountains, with their prices;—the book can be forwarded by mail to those requiring information on the above subjects. nov9

Patent Agency

DRAWINGS and specifications of machines, with other papers requisite for procuring Patents of New Inventions, will be furnished at short notice, at the office of the Scientific American. No charge will be made for advice or instructions on the subject of securing Patents.

PROSCH'S Daguerreotype Rooms,

EXPRESS BUILDING, 112 BROADWAY,
Nearly opposite the City Hotel, New York.

Likenesses obtained at this establishment in superior style, and inclosed in a handsome Case for One Dollar—Fifty Cents additional if colored and sealed.

Every Portrait shall give satisfaction or no sale.

N. B. Instruction given in the art, and the most improved apparatus, &c., furnished on as favorable terms as elsewhere. GEO. W. PROSCH. feb4

Lap-welded Boiler Flues.

PROSSER'S PATENT.

THESE Flues alone, are now used in their marine engine boilers, by the French and English governments, and also by companies and private individuals for marine, locomotive, and stationary boilers where rapid generation of steam, with economy of fuel, weight and stowage is an object of consideration.

They can be obtained only, of the Patentee, at No 6 Liberty street, New York. THOS. PROSSER,
Nov 19tf. Patentee.

The Nautilus.

The most complete, improved and perfect
LIFE PRESERVER

that has ever yet been used or known, is manufactured and for sale at No. 90 Nassau street. This instrument is so constructed as to be condensed into a small compass, and may ever be carried in the pocket; but when required for use, it instantly inflates itself, and may be adjusted round the body and secured in one fourth of a minute, and will effectually secure the wearer against the possibility of drowning. The price of the article is $3,50. jan 22.

Rolling Mills, blast Furnaces & Forges,

Iron works of all descriptious, erected upon the most improved plans; steam or water powers.

Drawings, plans and estimates made for buildings, furnaces and machinery, and contracts for the whole or any part thereof taken and executed with promptness and despatch; and will also give his personal superintendence in the erection of iron works of all kinds, such as Rolling mills, blast furnaces—of hot and cold blasts—anthricite, bituminous, and charcoal or wood furnaces, forges, tripthammers; iron, brass, and bell foundry, pudling and heating furnaees, air cupolo chaffery and refinery, or let out furnaces.

N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. feb11.

JOHN BROWN.
CARPENTER AND PRINTER'S JOINER.

Nos. 29 & 61 Ann-street, N. Y.

MANUFACTURER of Cases, Stands, Furniture, &c. Stereotype Blocks, of various sizes.

Box-wood and mahogany, for Engravers, always on hand.

Stereotype plates blocked at short notice.

Press, paper, and letter boards, of every description.

Book-binders' cutting and pattern boards.

Stereotype boxes, made to order.

Printers', stereotypers, type-founders's, and bookbinders' jobbing work done at the shortest notice.

N. B. Orders from various sections of the country solicited, and promptly executed. nov9

The Best Ink Known,

Two Silver Medals Premium!

At the Annual Fair of the American and Mechanics' Institute for 1846, a SILVER MEDAL was awarded by each to Thaddeus Davids for "the Best writing Ink known." 500 gross 2, 4 6, 8, 16, and 32 oz. steel pen ink; 100 gross, ditto blue, red, japan, and copying ditto; 200 gross, Indelible Ink, warranted, with and without a preparation in elegant cases; 5000 lbs. wafers, all sizes and qualities from 10 to 50 lbs.; 10,000 lbs., sealing wax from 6cts. to $1, per lbs. For sale, wholesale and retail, on accommodating terms, by THADDEUS DAVIDS, Importer and manufacturer of sealing wax, wafers, inks, indelible inks, &c., No. 112 John street, New York, and by all stationers, booksellers, druggists, &c., in the United States. jny29

GURNEY'S PREMIUM DAGUERRIAN Gallery, 180 Broadway, New York.—Pictures taken at the establishment are not excelled in this country—so say his numerous patrons. The public are respectfully invited to call and judge for themselves.

W. H. BRIDGENS.
Engraver, Die Sinker,

AND STEEL LETTER CUTTER
No. 184 William, corner of Spruce st.

Name-Stamps for Blacksmiths, Stone Cutters, Carpenters and machinists, steel letters and figures of all sizes constantly on hand for marking iron, steel, brass and wood; Notary seals, desk seals, door plates made and engraved; artificial flower stamps, vainers and loofers made at the shortest notice and on most reasonable terms feb11.

State Convention.

STATE OF NEW YORK, ss.—We, the Secretary of State, the Comptroller, and the Treasurer of the said State, having formed a Board of State Canvassers, and having, in conformity to the provisions of the act entitled "An act recommending a Convention of the People of the State," passed May 13, 1845, canvassed and estimated the whole number of votes or ballots given for and against the said proposed "Convention" at a General Election, held in the said State on the fourth day of November, in the year 1845, according to the certified statements of the said votes or ballots received by the Secretary of State in the manner directed by the said act, do hereby *determine, declare,* and *certify,* that the whole number of votes or ballots given under, and by virtue of the said act, was two hundred and forty-seven thousand, one hundred and seventeen; that of the said number, two hundred and thirteen thousand, two hundred and fifty-seven votes or ballots were given for the said Convention: That of the said first mentioned number, thirty-three thousand, eight hundred and sixty votes or ballots were given against the said Convention: And it appearing "by the said canvass that a majority of the votes or ballots given as aforesaid, are for a Convention," the said canvassers do farther *certify* and *declare,* that a Convention of the People of the said State will be called accordingly; and that an election for Delegatas to the said Convention will be held on the last Tuesday of April, in the year 1846, to meet in Convention at the Capitol in the City of Albany, on the first Monday in June, 1846, pursuant to the provisions of the aforesaid act of the Legislature.

Given under our hands, at the Secretary of State's Office, in the City of Albany, the twenty-sixth day of November in the year of our Lord one thousand eight hundred and forty-five.

N. S. BENTON, Secretary of State.
A. C. FLAGG, Comptroller.
BENJ. ENOS, Treasurer.

State of New York, Secretary's Office.—I certify the preceding to be a true copy of an original certificate of the Board of State Canvassers on file in this office.

Given under my hand and seal of office, at the City of Albany, the twenty-sixth day of November, in the year of our Lord one thousand eight hundred and forty-five.

N. S. BENTON, Secretary of State.

STATE OF NEW YORK, Secretary's Office,
Albany, January 28th, 1846.

To the Sheriff of the County of New York—*Sir:*—Notice is hereby given, that pursuant to the provisions of the act entitled "An act recommending a Convention of the People of this State, passed May 13, 1845, an election will be held on the last Tuesday of April next, in the several cities and counties of this State, to choose Delegates to the Convention to be held pursuant to the provisions of the aforesaid act and the certificate above recited.

The number of Delegates to be chosen in the County of New York will be the same as the number of Members of Assembly from the said county.

Respectfully yours,
N. S. BENTON, Secretary of State.

Sheriff's Office, New York, February 7, 1846.

The above is published pursuant to the notice of the Secretary of State, and the requirements of the statute in such case made and provided for. WM. JONES,
Sheriff of the City and County of New York.

☞ All the public newspapers in the county will publish the above once in each week until election, and then hand in their bills for advertising the same, so that they may be laid before the Board of Supervisors and passed for payment.

See Revised Statutes, vol. I, chap. vi., title 3d, article 3d—part 1st, page 140. march 18 t E.

JOHNSON'S
DINING SALOON,

No. 144 FULTON STREET.
(Near Broadway): New York.

BILL OF FARE.

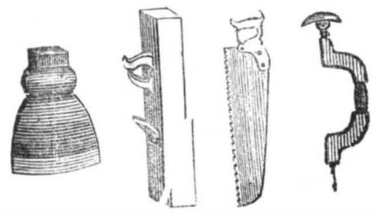
Roast Turkey,	18d	Boiled Ham,	6d
" Goose,	18d	Pork and Beans,	6d
" Chicken,	18d	Veal Pie,	6d
" Duck,	18d	Beef Steak Pie,	6d
" Beef,	6d	Chicken Pie,	12d
" Pork,	6d	Mush and Milk,	6d
" Veal,	6d	Rice and Milk,	6d
" Lamb,	6d	Lamb Pot Pie,	6d
" Pig,	12d	Fried Fish,	6d
Boiled Chicken,	12d	Fried Clams,	6d
" Mutton,	6d	Ham and Eggs,	12d
" Corned Beef,	6d	Chicken Soup,	6d
" Pork,	6d	Beef Soup,	6d
" Fish,	6d	Coffee,	6d

Dessert.

Suet Pudding	6d	Mince Pie,	6d
Indian Pudding,	6d	Apple Pie,	6d
Rice Pudding,	6d	Peach Pie,	6d
Plum Pudding,	6d	lum Pie,	6d
Bread Pudding,	6d	u mpkin Pie,	6d
Apple Dumplings,	6d	Custard Pie,	6d

Breakfast and Tea.

Beef Steak,	6d	Hot Corn Bread,	6d
Veal Pie,	6d	Indian Cakes,	6d
Mutton Chops,	6d	Boiled Eggs,	6d
Ham and Eggs,	12d	Fried Eggs,	6d
Fried Tripe,	6d	Toast,	6d
Fried Sausages,	6d	Hot Muffins,	6d
Fried Fish,	6d	Hot Rolls,	6d
Fried Clams,	6d	Tea,	3d
Fried Liver,	6d	Coffee,	3d



AT HENRY ROWNTREE'S old established *Tool Store,* at the Corner of Chambers and Chatham streets, Mechanics, Farmers, &c., will find an assortment of good Tools, suitable for almost every branch of trade.

H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

H. R. has a greater part of his goods made expressly for him, and Mechanics, &c., may place confidence in them, having had the gold medal awarded him, at the late Fair, for the best tools.

First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.

☞ Remember, at the corner of Chambers and Chatham streets. dec26

W. N. SEYMOUR & Co.

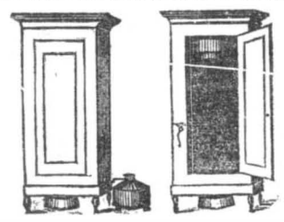
IMPORTERS AND DEALERS,
AT THE
Old Established Hardware and Tool Store,
No. 4 Chatham Square,
(at the Foot of the Bowery, N.Y.)

HAVE the greatest assortment of Hardware for builders; Mechanics' tools of all descriptions.

Wm. Graves & Sons' warranted cast steel files & tools.
Worrall's warranted cast steel saws.
Hoe & Co.'s do. do. do.
Cabinet Trimmings. Tin and wooden ware.
House-keeping articles of great variety.
Agricultural tools. Patent Safety Fuse for blasting.
Sole Agents, for this city, for J. A. Fay's patent Mortising Machine.

THE INVISIBLE DOOR SPRING.

W. N. S. & Co. have taken the exclusive agency, for this city, of Ellis's Invisible Door Spring, which commands a ready preference over all others, and has made arrangements to have them put on and adjusted to the doors of those who may require them; Mr. Shaffer, 75 Warren st, is engaged to superintend this department, and will promptly attend to all orders in this line.
Dec. 25.



Locke's Portable Shower Bath.

THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the id of servants, and withodt haviug a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st. JOHN LOCKE.
Dec 4.

ILLUSTRATED BOTANY.

Edited by JOHN B. NEWMAN, M. D.

Circumstances make the man, and very often, as in the present case, the book. For years there has been a steadily increasing interest felt for the vegetable kingdom. Latterly this taste has been partially gratified by the literary magazines, which owe their popularity, in a great measure to the beautiful flower prints that adorn them. One specimen a month, however, is not enough, nor is it required in such connection. A work relating exclusively to the subject, is wanted by the public, and this want, the present enterprise is intended to supply.

Preceded by a short introduction on Physiology, and a view of the Natural and Linnæan Systems, the work will be devoted to a separate consideration of each plant.—Together with our own information, we shall draw on the standard works on Chemistry, Botany, and Medicine, combining every useful item of knowledge, and without lessening its value, present it in a concise and pleasing form. Obtaining our supplies from the same sources as the bee, we hope to *secrete* as elegant a sweet for the mind, as it does for the body. The properties of each, more especially the medicinal, will be confirmed, in a great number of instances, by personal experience. To this will be added its history; its meaning in the language of flowers; and poetry, either original or selected from the gems of the children of song.

The whole illustrated by splendid colored engravings, taken from nature. full size, and finished in the highest style of modern art.

This work is designed to be eminently popular in its application, and there is enough of that which is stronger than fiction about it, to render it, in no ordinary degree, interesting and instructive.

Terms.—This work will be published monthly, with four or six flowers, handsomely painted, in each number. Price three dollars a year, or two copies sent to one address for five dollars. A *very* liberal discount allowed to agents. J. K. WELLMAN,
Publisher and proprietor, 118 Nassau st.

*** Furnished to Seminaries, Colleges, and societies, in clubs, 10 copies for $20 a-year.

PARTICULAR NOTICE.

We do not intend to confine ourselves to the botanical descriptions of each plant, but on the contrary, divested of technicality, intend to make it a thoroughly scientific work, in all the departments of Botany. It will also give information on the cultivation of Plants and Flowers. In a word, it will comprise the whole science.

We give below the *free* opinions of the press.

From the N.Y. Tribune.

"ILLUSTRATED BOTANY."—This is a new candidate for popular favor, in the shape of a monthly periodical. The first two numbers are before us, and if they may be regarded as speeimens of those which are to follow, the work will certainly prove highly attractive. It is to be devoted to a separate consideration of each plant in the vegetable kingdom, the whole illustrated by colored engravings, taken from nature, full size, and finished in the highest style of modern art. Four or six of these engravings will be given in each number. Those in the numbers already issued are of the most beautiful and splendid description. The Editor will draw on the standard works on chemistry, botany, and medicine, and thus combine in a brief form every useful item of knowledge respecting plants and flowers, their medicinal qualities, &c. To this will be added their history and their meaning in the "language of flowers." To all lovers of the beautiful in Nature and Art, we commend this work as eminently worthy of patronage.

From the Christian Advocate and Journal, (Edited by T. E. Bond, M. D,)

The painted specimens are really exquisitely done; and the great marvel with us is, how the work can be afforded at the low price of three dollars per annum, or two copies to an address for five dollars. Engravings can be cheaply multiplied, but paintings must be executed separately, and without the aid of labor-saving machinery. It will give us real pleasure to announce the successive numbers of this beautiful periodical, as we have been led to think the study of Botany not only as an innocent recreation, but eminently promotive of piety.

From the N. Y. Surgical and Medical Reporter.

We have received the first number of "The Illustrated Botany." This periodical is got up in a very neat form, and displays taste and judgment in its Editor, who, being a well educated medical man, is prepared to make a work of this kind very interesting and useful to the general reader. The colored plates are unsurpassed in beauty and finish.

From the Protestant Churchman (N. Y.)

ILLUSTRATED BOTANY.—The design of this work is admirable. It is intended to comprise scientific descriptions of the most valuable native and exotic plants, with their history, medicinal properties, &c. &c.

N. B. Publishers of newspapers who give the above prospectus three insertions, shall receive the work one year. march 26.

ADAMS & Co.'S

GREAT EASTERN, SOUTHERN, AND WESTERN
Daily package Express.

ADAMS & CO. respectfully give notice that their arrangements for their various Expresses have been perfected with the greatest care, and enable them to forward, with the utmost security and rapidity, and at moderate rates, Merchandize of every description.

Our Agents in these several Cities pay particular attention to the collection and payment of Notes, Drafts, Bills, &c., and all other business appertaining to our Express.

In connexion with Messrs. Wilmer & Smith, of Liverpool, we have established an European Express, similar in its design and operation to our American Express, and alike beneficial to the Merchants and Importers of both countries. Custom House business promptly attended to.

Express for the South and West leaves the Office daily, at 1-4 to 3, and half past 4 P.M.

Express for the East at 1-4 to 5 P. M.

Merchants and others will bear in mind, we run the only Express Cars between New York and Baltimore.

feb4 nv9o5w ADAMS & CO., 16 Wall street.

Engraving on Wood.

THE subscriber is prepared to execute
WOOD ENGRAVINGS
of Machinery, Landscapes, Plans of every description for newspapers, book embellishments, &c. &c., in good style, and at short notice, at 89 Nas au street, in the
SUN BUILDINGS,
and adjoining the office of the Scientific American.
marsh 26. A. R. HAIGHT.

ALEX. MACDONALD: PRINTER.

© 1846 SCIENTIFIC AMERICAN, INC.